

WIndiana Conference

July 21, 2010

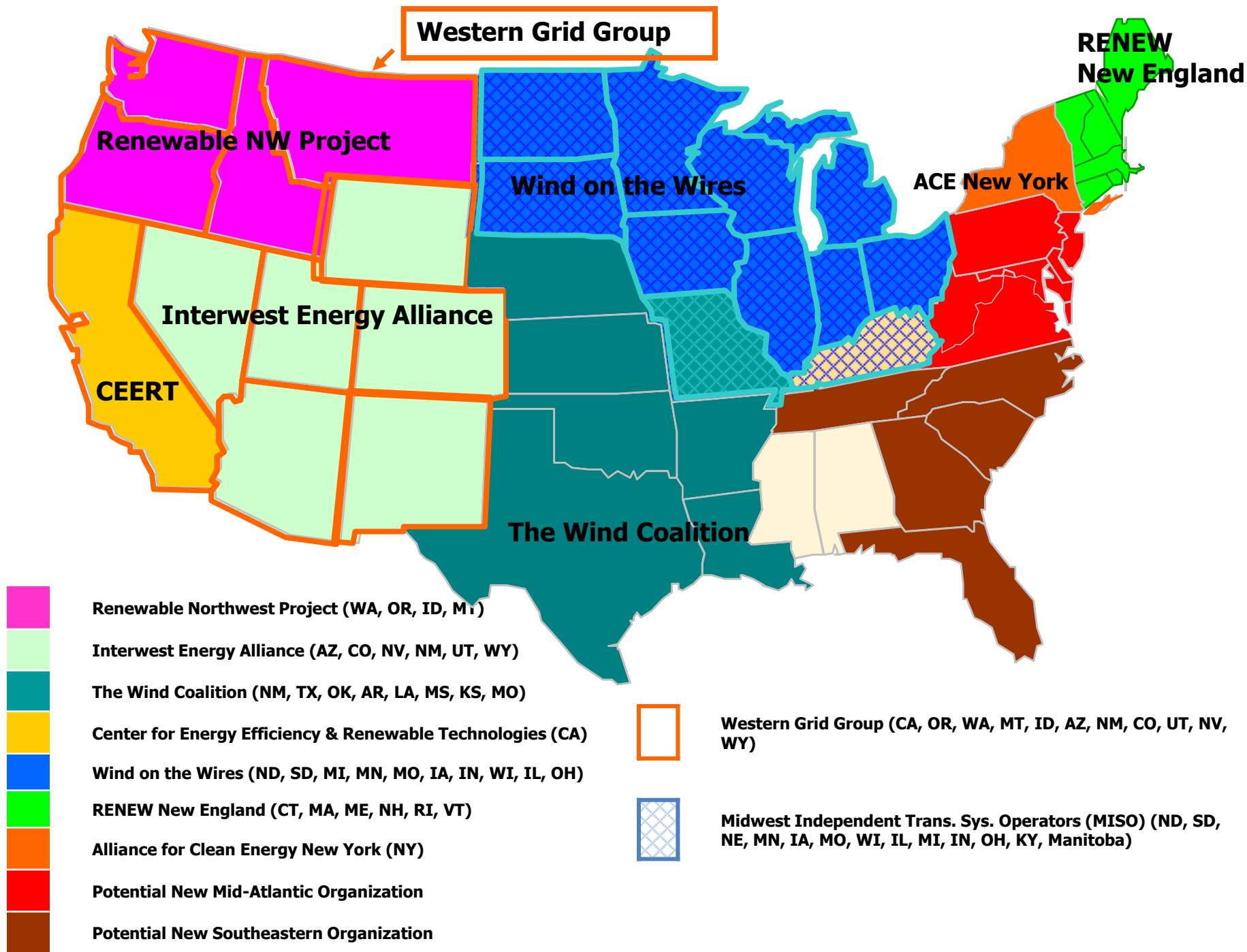
Transmission and Renewables in the Midwest ISO

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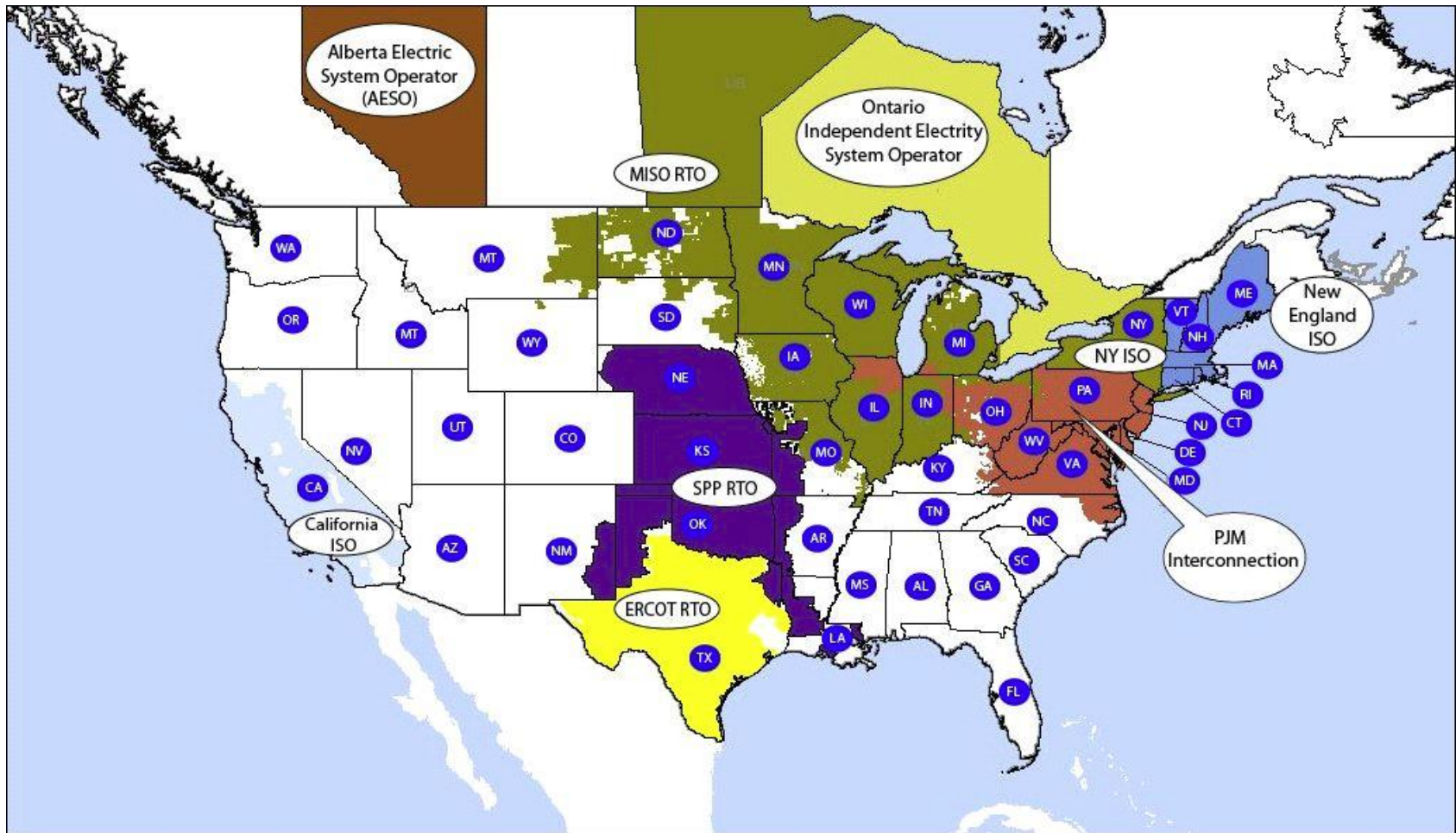


Background on Wind on the Wires

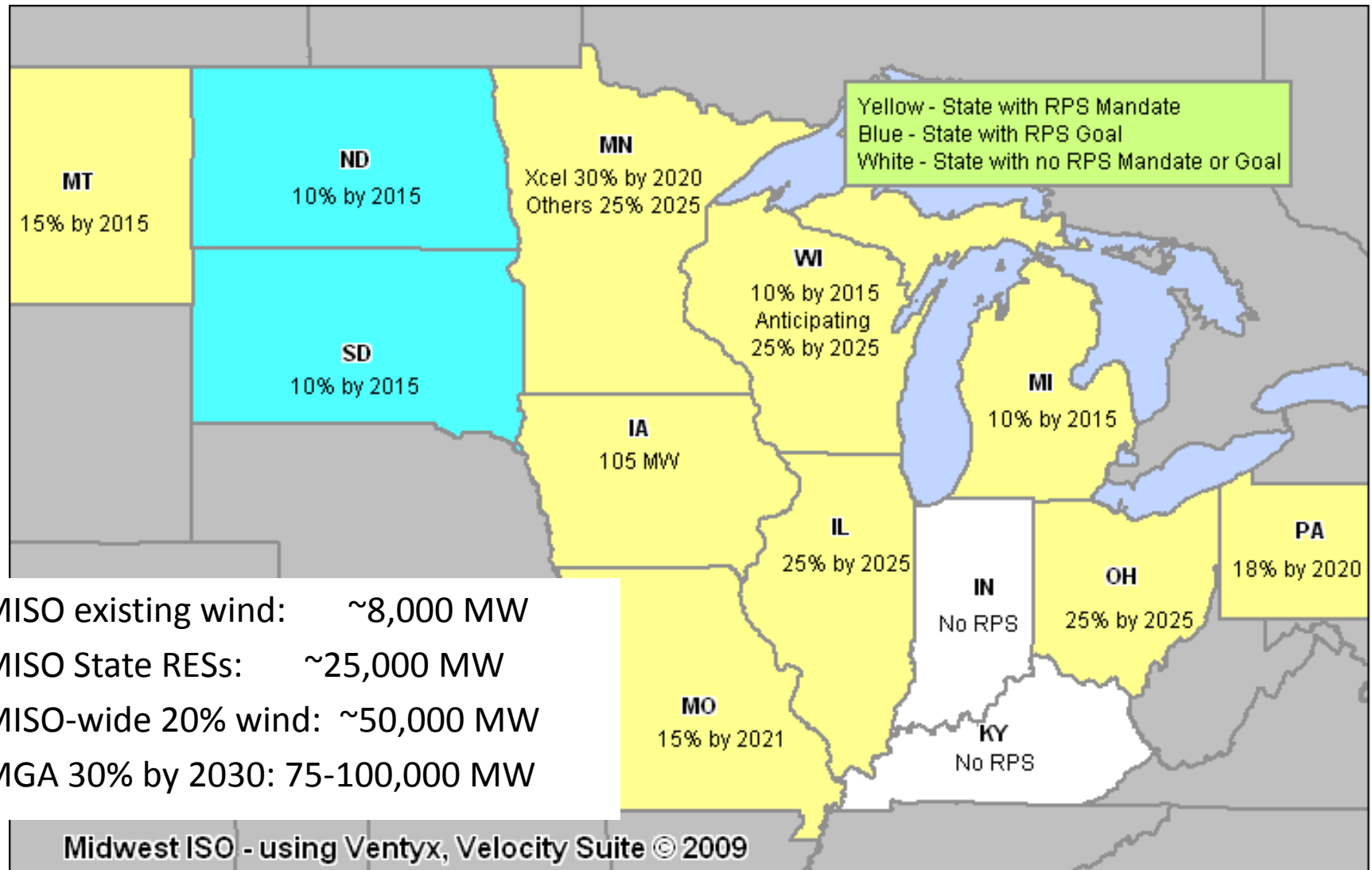
- **Non-profit Advocacy Organization launched in 2001** to overcome the barriers to bringing wind power to market in the Midwest.
- **Members** include non-profit environmental organizations, American Indian tribal representatives, wind developers and manufacturers, American Wind Energy Association, businesses that provide goods and services to the wind industry.
- **Work in 3 areas:**
 - **Technical** – work with electric utilities and Midwest Independent System Operator (MISO – regional “grid” operator) on transmission planning for wind, market and operational rules that treat wind fairly
 - **Regulatory** – actively participate in cases where states are approving new transmission lines that will access wind power
 - **Policy education/outreach/advocacy** – work with governors, state regulators, legislators, local elected officials, regional groups, colleague organizations, general public on wind and transmission issues
- **Support** – Foundation grants and member contributions



Regional Transmission Organizations



MISO State RES Requirements (May 2009)



- MISO existing wind: ~8,000 MW
- MISO State RESs: ~25,000 MW
- MISO-wide 20% wind: ~50,000 MW
- MGA 30% by 2030: 75-100,000 MW

On-Going Challenges for Wind Power and Transmission

- Best wind resources are located far from load; need agreement on what transmission should be built
- Transmission studies that are properly scoped and completed on schedule; studies must then successfully move through the regulatory stage and into construction
- Cost allocation – who pays for new transmission? Cost for large, regional transmission facilities needs to be broadly allocated
- Fair Market and operational “rules of the road” – must realize and recognize unique characteristics of variable resources like wind power
- Wind Integration issues – these issues show up in transmission planning, the energy market and operations
- Siting/routing new transmission lines

Regional Transmission Planning

- Midwest ISO
 - **Transmission Expansion Planning (MTEP 2010)**
 - Regional Generation Outlet Study (RGOS)
 - Top Congested Flowgate, Cross Border Congested Flowgate Studies
- PJM
 - **Regional Transmission Expansion Planning (2010 RTEP)**
- DOE
 - Eastern Interconnection Planning Collaborative
 - Eastern Interconnection States Planning Council

Additional inputs to regional planning

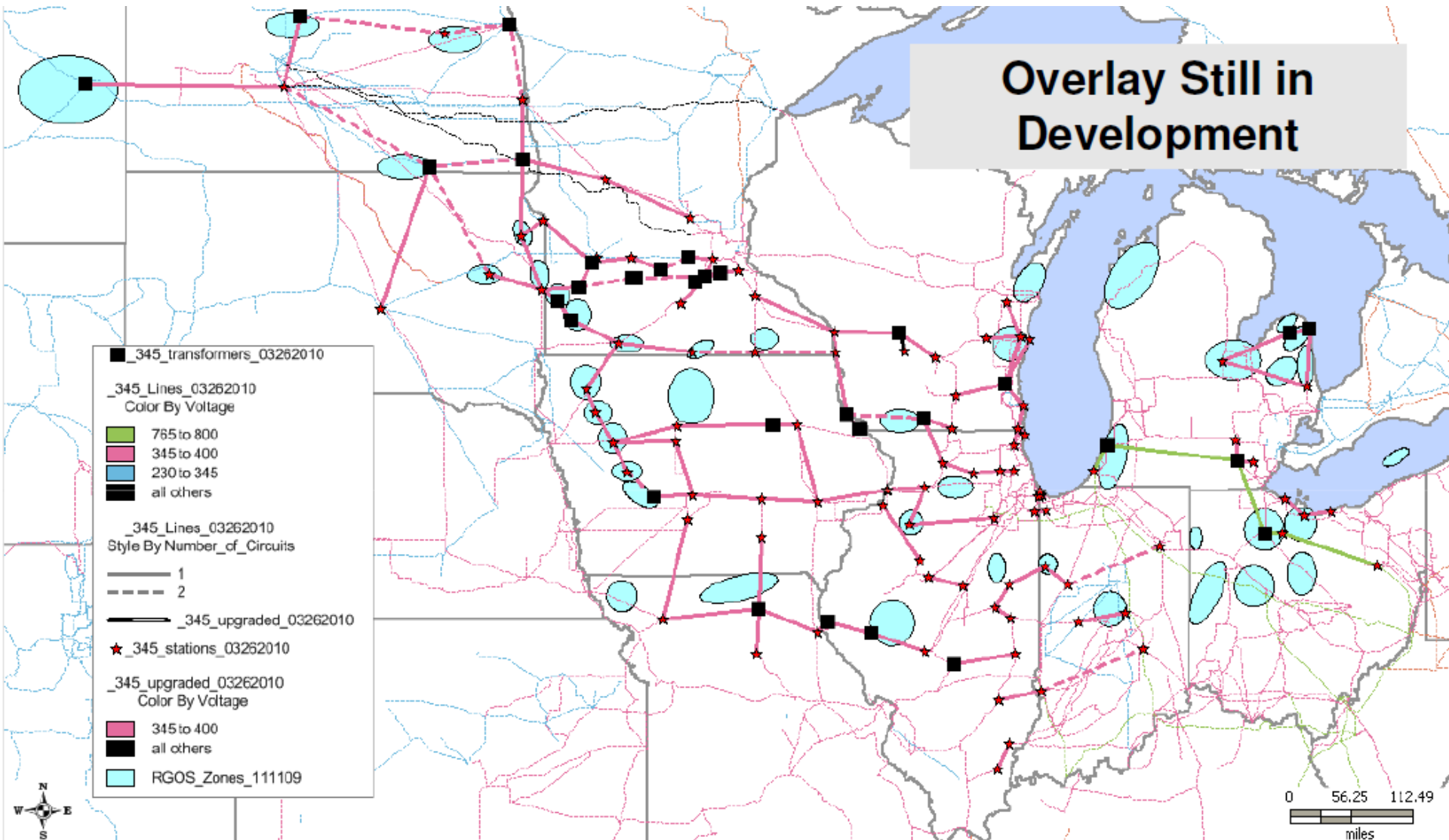
- “Strategic Area Midwest Transmission Study”
 - ATC, AEP, MidAmerican, Exelon, Xcel, Northwestern
 - Study of transmission needed to deliver 55 GW of total wind
- “Green Power Express”, ITC, Proposal to deliver 12 GW of wind

Regional Generation Outlet Study - MISO

- Developing transmission projects that will facilitate the state renewable energy mandates in the Midwest ISO footprint
- Phase I (North Dakota, South Dakota, Minnesota, Wisconsin, Iowa, Illinois)
 - Started May 2008; Final report posted March 5, 2010
 - 15 GW & 25 GW; UMTDI Scenarios plus IL zones & existing wind
- Phase II (added Missouri, Illinois, Indiana, Michigan, Ohio; incorporates results for RGOS I)
 - Referred to as 'RGOS' going forward (from December 2009)
 - The development of zones is complete; ~ 40 GW of total wind
 - Iterative development of transmission plans under way; options will include 345 kV, 765 kV, and HVDC
 - Analysis will include power flow, production cost models (PROMOD), and business case / value metrics
 - Goal is to deliver one plan to Appendix B of the MTEP 2010 Report

Regional Generation Outlet Study - MISO

Overlay Still in Development



Midwest ISO Cost Allocation Proposal

- Filed with FERC July 15, 2010
- Ruling by FERC on proposal requested by December 2010 meeting
- Elements of proposal:
 - Allocating 100 percent of regional transmission costs to load and exports,
 - Maintaining the current cost allocation for generator interconnection projects,
 - Maintaining a local allocation of new costs for projects that are generally small and local in nature including those developed for reliability purposes; and
 - Avoiding re-allocation of existing transmission costs.
- Two existing cost allocation methods for reliability and market congestion reduction transmission upgrades, also known as RECB I and RECB II, will remain in their current form.
- New generation interconnection projects will continue to pay the cost of their individual network upgrades, as they do under the current tariff.